

0067776

SAF-B05-040
300-VTS Verification
FINAL VALIDATION PACKAGE

COMPLETE COPY OF VALIDATION PACKAGE TO:

Jeanette Duncan

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mje 11/14/05
INITIAL/DATE

SDG H3333

SAF-B05-040

Waste Site: 300-VTS

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Date: 27 October 2005
To: Washington Closure Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 300-VTS Verification – Waste Site 300 VTS
Subject: Radiochemistry - Data Package No. H3333-EB

INTRODUCTION

This memo presents the results of data validation on Data Package No. H3333-EB prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Date
J03WW7	8/22/05	Soil	C	See note 1
J03WW8	8/22/05	Soil	C	See note 1
J03WW9	8/22/05	Soil	C	See note 1
J03WX0	8/22/05	Soil	C	See note 1
J03WX1	8/22/05	Soil	C	See note 1

1 – Alpha spectroscopy (isotopic plutonium and americium-241), total strontium and gamma spectroscopy.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 300 Area Remedial Action Sampling and Analysis Plan (DOE/RL-2001-48, June 2004). Appendices 1 through 6 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation
- Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

• Holding Times

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

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- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

All accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If

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either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All duplicate results were acceptable.

Field Duplicates

One set of field duplicate samples (J03WW7/J03WX1) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. The RPDs for potassium-30 (44%) and thorium-232 (48%) were outside QC limits. Under the WCH statement of work, no qualification is required. All other field duplicate results were acceptable.

• **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the remaining waste sites RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

• **Completeness**

Data package No. H3333 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

WCH, Contract #20266, *Validation Statement of Work*, Washington Closure Hanford Incorporated, July 7, 2003.

DOE/RL-2001-48, Rev. 1, *300 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, June 2004.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the BHI statement of work are as follows:

- U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.
- UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.
- J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.
- R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.
- UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2
Summary of Data Qualification

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RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: H3333	REVIEWER: TLI	Project: 300-VTS	PAGE <u>1</u> OF <u>1</u>
Comments: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

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Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

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Project: WASHINGTON CLOSURE HANFORD											
Laboratory: LLI		SDG: H3333									
Sample Number		J03WW7		J03WW8		J03WW9		J03WX0		J03WX1	
Remarks										Duplicate	
Sample Date		8/22/05		8/22/05		8/22/05		8/22/05		8/22/05	
Radiochemistry		Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Total Strontium	1	-0.035	U	-0.007	U	-0.035	U	-0.046	U	-0.036	U
Plutonium 238	1	0	U	0	U	0	U	0	U	0	U
Plutonium 239/240	1	0	U	0.097	U	0	U	0	U	0.037	U
Americium 241	1	0	U	0.102	U	0.176	U	0.136	U	0.047	U
Potassium-40		11.3		7.10		12.7		11.6		7.25	
Cobalt 60	0.05		U U		U U		U U		U U		U U
Ruthenium 103			U U		U U		U U		U U		U U
Cesium 137	0.1		U U		U U		U U	0.029			U U
Radium-226	0.2	0.452		0.334		0.433		0.419		0.356	
Radium-228		0.685		0.409		0.534		0.642		0.416	
Europium 152			U U		U U		U U		U U		U U
Europium 154			U U		U U		U U		U U		U U
Europium 155			U U		U U		U U		U U		U U
Thorium-228		0.563		0.615		0.670		0.661		0.556	
Thorium-232		0.685		0.409		0.534		0.642		0.416	
Uranium-235(gea)			U U		U U		U U		U U		U U
Uranium-238(gea)			U U		U U		U U		U U		U U
Americium-241(gea)			U U		U U		U U		U U		U U
Ruthenium-106			U U		U U		U U		U U		U U

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* - RQL exceeded

Laboratory applied non-detect qualifiers "U" have been included in this table to minimize potential miss-interpretation of results. All other qualifiers shown were applied during validation.

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H3333

R508171-01

J03WW7

DATA SHEET

SDG <u>7708</u>	Client/Case no <u>Hanford</u>	SDG <u>H3333</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R508171-01</u>	Client sample id <u>J03WW7</u>	
Dept sample id <u>7708-001</u>	Location/Matrix <u>300-FF-2 300-VTS</u>	<u>SOLID</u>
Received <u>08/23/05</u>	Collected/Weight <u>08/22/05 08:05</u>	<u>1657 g</u>
% solids <u>98.9</u>	Custody/SAF No <u>B05-040-01</u>	<u>B05-040</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Strontium	SR-RAD	-0.035	0.10	0.22	1.0	U	SR
Plutonium 238	13981-16-3	0	0.096	0.37	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.096	0.37	1.0	U	PU
Americium 241	14596-10-2	0	0.055	0.21	1.0	U	AM
Potassium 40	13966-00-2	11.3	0.81	0.38			GAM
Cobalt 60	10198-40-0	U		0.039	0.050	U	GAM
Cesium 137	10045-97-3	U		0.035	0.10	U	GAM
Radium 226	13982-63-3	0.452	0.063	0.061	0.10		GAM
Radium 228	15262-20-1	0.685	0.16	0.17	0.20		GAM
Europium 152	14683-23-9	U		0.082	0.10	U	GAM
Europium 154	15585-10-1	U		0.13	0.10	U	GAM
Europium 155	14391-16-3	U		0.092	0.10	U	GAM
Thorium 228	14274-82-9	0.563	0.038	0.038			GAM
Thorium 232	TH-232	0.685	0.16	0.17			GAM
Uranium 235	15117-96-1	U		0.13		U	GAM
Uranium 238	U-238	U		4.1		U	GAM
Americium 241	14596-10-2	U		0.13		U	GAM
Ruthenium-106	13967-48-1	U		0.29		U	GAM

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Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>10/28/05</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H3333

R508171-02

J03WW8

DATA SHEET

SDG <u>7708</u>	Client/Case no <u>Hanford</u>	SDG <u>H3333</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R508171-02</u>	Client sample id <u>J03WW8</u>	
Dept sample id <u>7708-002</u>	Location/Matrix <u>300-FF-2 300-VTS</u>	<u>SOLID</u>
Received <u>08/23/05</u>	Collected/Weight <u>08/22/05 08:17</u>	<u>1747 g</u>
% solids <u>99.2</u>	Custody/SAF No <u>B05-040-01</u>	<u>B05-040</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Strontium	SR-RAD	-0.007	0.14	0.28	1.0	U	SR
Plutonium 238	13981-16-3	0	0.065	0.25	1.0	U	PU
Plutonium 239/240	PU-239/240	0.097	0.13	0.25	1.0	U	PU
Americium 241	14596-10-2	0.102	0.20	0.39	1.0	U	AM
Potassium 40	13966-00-2	7.10	0.43	0.24			GAM
Cobalt 60	10198-40-0	U		0.028	0.050	U	GAM
Cesium 137	10045-97-3	U		0.025	0.10	U	GAM
Radium 226	13982-63-3	0.334	0.058	0.047	0.10		GAM
Radium 228	15262-20-1	0.409	0.12	0.12	0.20		GAM
Europium 152	14683-23-9	U		0.089	0.10	U	GAM
Europium 154	15585-10-1	U		0.089	0.10	U	GAM
Europium 155	14391-16-3	U		0.099	0.10	U	GAM
Thorium 228	14274-82-9	0.615	0.059	0.049			GAM
Thorium 232	TH-232	0.409	0.12	0.12			GAM
Uranium 235	15117-96-1	U		0.14		U	GAM
Uranium 238	U-238	U		3.0		U	GAM
Americium 241	14596-10-2	U		0.14		U	GAM
Ruthenium-106	13967-48-1	U		0.23		U	GAM

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Lab id <u>EBRLNE</u>
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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H3333

R508171-03

J03WW9

DATA SHEET

SDG <u>7708</u>	Client/Case no <u>Hanford</u>	SDG <u>H3333</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R508171-03</u>	Client sample id <u>J03WW9</u>	
Dept sample id <u>7708-003</u>	Location/Matrix <u>300-FF-2 300-VTS</u>	SOLID
Received <u>08/23/05</u>	Collected/Weight <u>08/22/05 08:28</u>	<u>1722 g</u>
% solids <u>99.0</u>	Custody/SAF No <u>B05-040-01</u>	<u>B05-040</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Strontium	SR-RAD	-0.035	0.11	0.24	1.0	U	SR
Plutonium 238	13981-16-3	0	0.060	0.23	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.060	0.23	1.0	U	PU
Americium 241	14596-10-2	0.176	0.18	0.34	1.0	U	AM
Potassium 40	13966-00-2	12.7	0.69	0.22			GAM
Cobalt 60	10198-40-0	U		0.026	0.050	U	GAM
Cesium 137	10045-97-3	U		0.031	0.10	U	GAM
Radium 226	13982-63-3	0.433	0.063	0.060	0.10		GAM
Radium 228	15262-20-1	0.534	0.13	0.15	0.20		GAM
Europium 152	14683-23-9	U		0.066	0.10	U	GAM
Europium 154	15585-10-1	U		0.10	0.10	U	GAM
Europium 155	14391-16-3	U		0.094	0.10	U	GAM
Thorium 228	14274-82-9	0.670	0.055	0.055			GAM
Thorium 232	TH-232	0.534	0.13	0.15			GAM
Uranium 235	15117-96-1	U		0.12		U	GAM
Uranium 238	U-238	U		3.7		U	GAM
Americium 241	14596-10-2	U		0.21		U	GAM
Ruthenium-106	13967-48-1	U		0.24		U	GAM

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Report date <u>10/28/05</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H3333

R508171-04

J03WX0

DATA SHEET

SDG <u>7708</u>	Client/Case no <u>Hanford</u>	SDG <u>H3333</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R508171-04</u>	Client sample id <u>J03WX0</u>	
Dept sample id <u>7708-004</u>	Location/Matrix <u>300-FF-2 300-VTS</u>	<u>SOLID</u>
Received <u>08/23/05</u>	Collected/Weight <u>08/22/05 08:42</u>	<u>1626 g</u>
% solids <u>99.0</u>	Custody/SAF No <u>B05-040-01</u>	<u>B05-040</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Strontium	SR-RAD	-0.046	0.095	0.21	1.0	U	SR
Plutonium 238	13981-16-3	0	0.063	0.24	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.063	0.24	1.0	U	PU
Americium 241	14596-10-2	0.136	0.18	0.35	1.0	U	AM
Potassium 40	13966-00-2	11.6	0.69	0.28			GAM
Cobalt 60	10198-40-0	U		0.032	0.050	U	GAM
Cesium 137	10045-97-3	0.029	0.020	0.027	0.10		GAM
Radium 226	13982-63-3	0.419	0.062	0.061	0.10		GAM
Radium 228	15262-20-1	0.642	0.14	0.14	0.20		GAM
Europium 152	14683-23-9	U		0.071	0.10	U	GAM
Europium 154	15585-10-1	U		0.11	0.10	U	GAM
Europium 155	14391-16-3	U		0.099	0.10	U	GAM
Thorium 228	14274-82-9	0.661	0.050	0.053			GAM
Thorium 232	TH-232	0.642	0.14	0.14			GAM
Uranium 235	15117-96-1	U		0.12		U	GAM
Uranium 238	U-238	U		4.0		U	GAM
Americium 241	14596-10-2	U		0.22		U	GAM
Ruthenium-106	13967-48-1	U		0.26		U	GAM

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SUMMARY DATA SECTION

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EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H3333

R508171-05

J03WX1

DATA SHEET

SDG <u>7708</u>	Client/Case no <u>Hanford</u>	SDG <u>H3333</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R508171-05</u>	Client sample id <u>J03WX1</u>	
Dept sample id <u>7708-005</u>	Location/Matrix <u>300-FF-2 300-VTS</u>	<u>SOLID</u>
Received <u>08/23/05</u>	Collected/Weight <u>08/22/05 08:05</u>	<u>1725 g</u>
% solids <u>99.0</u>	Custody/SAF No <u>B05-040-01</u>	<u>B05-040</u>

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Strontium	SR-RAD	-0.036	0.11	0.24	1.0	U	SR
Plutonium 238	13981-16-3	0	0.074	0.28	1.0	U	PU
Plutonium 239/240	PU-239/240	0.037	0.074	0.28	1.0	U	PU
Americium 241	14596-10-2	0.047	0.093	0.36	1.0	U	AM
Potassium 40	13966-00-2	7.25	0.49	0.26			GAM
Cobalt 60	10198-40-0	U		0.033	0.050	U	GAM
Cesium 137	10045-97-3	U		0.033	0.10	U	GAM
Radium 226	13982-63-3	0.356	0.091	0.070	0.10		GAM
Radium 228	15262-20-1	0.416	0.12	0.13	0.20		GAM
Europium 152	14683-23-9	U		0.10	0.10	U	GAM
Europium 154	15585-10-1	U		0.11	0.10	U	GAM
Europium 155	14391-16-3	U		0.11	0.10	U	GAM
Thorium 228	14274-82-9	0.556	0.069	0.060			GAM
Thorium 232	TH-232	0.416	0.12	0.13			GAM
Uranium 235	15117-96-1	U		0.16		U	GAM
Uranium 238	U-238	U		3.8		U	GAM
Americium 241	14596-10-2	U		0.17		U	GAM
Ruthenium-106	13967-48-1	U		0.26		U	GAM

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Report date <u>10/28/05</u>

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

1.0 GENERAL

Bechtel Hanford Inc. (BHI) Sample Delivery Group H3333 was composed of five solid (soil) samples designated under SAF No. B05-040 with a Project Designation of: 300-VTS Verification.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to BHI via e-mail on September 8, 2005.

2.0 ANALYSIS NOTES

2.1 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.2 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.3 Americium-241 Analysis

No problems were encountered during the course of the analyses.

2.4 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa Mannion
Melissa C. Mannion
Senior Program Manager

9/19/05
Date

Bechtel Hanford Inc.				CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B05-040-01		Page 1 of 1		
Collector R Fahlberg				Company Contact J Lerch		Telephone No. 373-5309		Project Coordinator KESSNER, JH		Price Code		
Project Designation 300-VTS Verification				Sampling Location 300-FF-2 300-VTS H3333 (7708)		SAF No. B05-040		Air Quality <input type="checkbox"/>		Data Turnaround 15 Days		
Ice Chest No. ERC-01-040				Field Logbook No. EL 1395-11		COA RG3VTS2000		Method of Shipment Fed EX				
Shipped To EBERLINE SERVICES/ LIONVILLE				Offsite Property No. A050307		Bill of Lading/Air Bill No. SEE OSPC						
POSSIBLE SAMPLE HAZARDS/REMARKS Non Rad Area, No Activity Report Required Special Handling and/or Storage None 000018				Preservation		None	Cool 4C					
				Type of Container		P	aG					
				No. of Container(s)		1	1					
				Volume		1000mL	250mL					
SAMPLE ANALYSIS				See item (1) in Special Instructions.		PCBs - 8082 200 8/23/05						
Sample No.	Matrix *	Sample Date	Sample Time									
J03WW7	SOIL	8.22.05	0805	X	X							
J03WW8	SOIL	8.22.05	0817	X	X							
J03WW9	SOIL	8.22.05	0828	X	X							
J03WX0	SOIL	8.22.05	0842	X	X							
J03WX1	SOIL	8.22.05	0805	X	X							
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				
Relinquished By/Removed From ERC Date/Time 1430				Received By/Stored In Fed EX Date/Time				(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60); Gamma Spec - Add-on (Ruthenium-103); Strontium-89,90 - Total Sr; Isotopic Plutonium; Americium-241 MLM 8/23/05				
Relinquished By/Removed From FED EX Date/Time 08/23/05				Received By/Stored In LEW Date/Time 08/23/05 9:30								
Relinquished By/Removed From				Received By/Stored In								
Relinquished By/Removed From				Received By/Stored In								
Relinquished By/Removed From				Received By/Stored In								
Relinquished By/Removed From				Received By/Stored In								
LABORATORY SECTION				Received By				Date/Time				
FINAL SAMPLE DISPOSITION				Disposal Method				Disposed By				
								Date/Time				

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

Appendix 5

Data Validation Supporting Documentation

[illegible]

Technical verification forms present?.....Yes(No)N/A

Comments: _____

Instruments/detectors calibrated?.....Yes No N/A

Initial calibration acceptable? Yes No N/A

Standards NIST traceable?.....Yes No N/A

Standards Expired?Yes No N/A

Calculation check acceptable?Yes No N/A

Comments: _____

000020

3. Continuing Calibration (Levels D, E)

☒ N/A

Calibration checked within required frequency? Yes No N/A

Calibration check acceptable? Yes No N/A

Calibration check standards traceable? Yes No N/A

Calibration check standards expired? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments: _____

4. Background Counts (Levels D, E) ☒ N/A

Background Counts checked within required frequency? Yes No N/A

Background Counts acceptable? Yes No N/A

Calculation check acceptable? Yes No N/A

Comments: _____

5. Blanks (Levels B, C, D, E) ☐ N/A

Method blank analyzed within required frequency? ☒ Yes ☐ No ☐ N/A

Method blank results acceptable? ☒ Yes ☐ No ☐ N/A

Analytes detected in method blank? Yes ☒ No ☐ N/A

Field blank(s) analyzed? Yes ☐ No ☒ N/A

Field blank results acceptable? Yes ☐ No ☒ N/A

Analytes detected in field blank(s)? Yes ☐ No ☒ N/A

Transcription/Calculation Errors? (Levels D, E) Yes ☐ No ☒ N/A

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ☐ N/A

LCS /BSS analyzed within required frequency? ☒ Yes ☐ No ☐ N/A

LCS/BSS recoveries acceptable? ☒ Yes ☐ No ☐ N/A

LCS/BSS traceable? (Levels D,E) Yes ☐ No ☒ N/A

LCS/BSS expired? (Levels D,E) Yes ☐ No ☒ N/A

LCS/BSS levels correct? (Levels D,E) Yes ☐ No ☒ N/A

Transcription/Calculation Errors? (Levels D, E) Yes ☐ No ☒ N/A

Comments: _____

7. Chemical Carrier Recovery (Levels C, D, E) ☒ N/A

Chemical carrier added? Yes ☐ No ☒ N/A

Chemical recovery acceptable? Yes ☐ No ☒ N/A

Chemical carrier traceable? (Levels D, E) Yes ☐ No ☒ N/A

000022

Chemical carrier expired? (Levels D, E)Yes No N/A

Transcription/Calculation errors? (Levels D, E).....Yes No N/A

Comments: _____

8. Tracer Recovery (Levels C, D, E) ☐ N/A

Tracer added?.....☒ Yes No N/A

Tracer recovery acceptable?☒ Yes No N/A

Tracer traceable? (Levels D, E)Yes No ☒ N/A

Tracer expired? (Levels D, E).....Yes No ☒ N/A

Transcription/Calculation errors? (Levels D, E).....Yes No ☒ N/A

Comments: _____

9. Matrix Spikes (Levels C, D, E)..... ☒ N/A

Matrix spike analyzed?Yes No N/A

Spike recoveries acceptable?Yes No N/A

Spike source traceable? (Levels D, E)Yes No N/A

Spike source expired? Levels D, E).....Yes No N/A

Transcription/Calculation Errors? (Levels D, E).....Yes No N/A

Comments: _____

10. Duplicates (Levels C, D, E) ☐ N/A

Duplicates Analyzed at required frequency? ☒ Yes No N/A

RPD Values Acceptable? ☒ Yes No N/A

Transcription/Calculation Errors? (Levels D, E) Yes No ☒ N/A

Comments: _____

11. Field QC Samples (Levels C, D E) ☐ N/A

Field duplicate sample(s) analyzed? ☒ Yes No N/A

Field duplicate RPD values acceptable? Yes ☒ No N/A

Field split sample(s) analyzed? Yes ☒ No N/A

Field split RPD values acceptable? Yes No ☒ N/A

Performance audit sample(s) analyzed? Yes ☒ No N/A

Performance audit sample results acceptable? Yes No ☒ N/A

Comments: _____ NO FS or PAS

k40 - 44%

ph 232 - 48%

12. Holding Times (All levels)

Are sample holding times acceptable? ☒ Yes No N/A

Comments: _____

13. Results and Detection Limits (All Levels)..... ☐ N/A

Results reported for all required sample analyses?..... Yes No N/A

Results supported in raw data?(Levels D, E)..... Yes No N/A

Results Acceptable? (Levels D, E) Yes No N/A

Transcription/Calculation errors? (Levels D, E)..... Yes No N/A

MDA's meet required detection limits? Yes No N/A

Transcription/calculation errors? (Levels D, E)..... Yes No N/A

Comments: _____

Appendix 6

Additional Documentation Requested by Client

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H3333

R508171-07

Method Blank

METHOD BLANK

SDG <u>7708</u>	Client/Case no <u>Hanford</u>	SDG <u>H3333</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R508171-07</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7708-007</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>B05-040</u>	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Total Strontium	SR-RAD	0.055	0.13	0.25	1.0	U	SR
Plutonium 238	13981-16-3	0.030	0.060	0.23	1.0	U	PU
Plutonium 239/240	PU-239/240	0	0.060	0.23	1.0	U	PU
Americium 241	14596-10-2	0.074	0.15	0.28	1.0	U	AM
Potassium 40	13966-00-2	U		0.28		U	GAM
Cobalt 60	10198-40-0	U		0.025	0.050	U	GAM
Cesium 137	10045-97-3	U		0.021	0.10	U	GAM
Radium 226	13982-63-3	U		0.041	0.10	U	GAM
Radium 228	15262-20-1	U		0.073	0.20	U	GAM
Europium 152	14683-23-9	U		0.044	0.10	U	GAM
Europium 154	15585-10-1	U		0.075	0.10	U	GAM
Europium 155	14391-16-3	U		0.052	0.10	U	GAM
Thorium 228	14274-82-9	U		0.033		U	GAM
Thorium 232	TH-232	U		0.073		U	GAM
Uranium 235	15117-96-1	U		0.071		U	GAM
Uranium 238	U-238	U		3.0		U	GAM
Americium 241	14596-10-2	U		0.069		U	GAM
Ruthenium-106	13967-48-1	U		0.14		U	GAM

300-VTS Verification

QC-BLANK 54172

METHOD BLANKS

Page 1

SUMMARY DATA SECTION

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000027

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>10/28/05</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3333

R508171-06

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7708</u>	Client/Case no <u>Hanford</u>	SDG <u>H3333</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R508171-06</u>	Client sample id <u>Lab Control Sample</u>	
Dept sample id <u>7708-006</u>	Material/Matrix <u>SOLID</u>	
	SAF No <u>B05-040</u>	

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Total Strontium	10.6	0.39	0.16	1.0		SR	9.96	0.40	106	82-118	80-120
Plutonium 238	21.5	2.2	0.21	1.0		PU	24.0	0.96	90	84-116	80-120
Plutonium 239/240	24.0	2.5	0.21	1.0		PU	26.4	1.1	91	83-117	80-120
Americium 241	20.3	2.1	0.22	1.0		AM	20.4	0.82	100	82-118	80-120
Cobalt 60	0.601	0.053	0.017	0.050		GAM	0.591	0.024	102	73-127	80-120
Cesium 137	0.623	0.050	0.037	0.10		GAM	0.573	0.023	109	72-128	80-120

300-VTS Verification

QC-LCS 54171

LAB CONTROL SAMPLES

Page 1

SUMMARY DATA SECTION

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000028

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>10/28/05</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H3333

R508171-08

J03WX0

DUPLICATE

SDG 7708		Client/Case no <u>Hanford</u>		SDG H3333
Contact <u>Melissa C. Mannion</u>		Contract No. <u>630</u>		
DUPLICATE		ORIGINAL		
Lab sample id <u>R508171-08</u>	Lab sample id <u>R508171-04</u>	Client sample id <u>J03WX0</u>		
Dept sample id <u>7708-008</u>	Dept sample id <u>7708-004</u>	Location/Matrix <u>300-FF-2 300-VTS</u> <u>SOLID</u>		
	Received <u>08/23/05</u>	Collected/Weight <u>08/22/05 08:42</u> <u>1626 g</u>		
% solids <u>99.0</u>	% solids <u>99.0</u>	Custody/SAF No <u>B05-040-01</u> <u>B05-040</u>		

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI- FIERS	RPD %	3σ TOT	DER σ
Total Strontium	0.021	0.13	0.25	1.0	U	SR	-0.046	0.095	0.21	U	-	0.8	
Plutonium 238	0	0.062	0.24	1.0	U	PU	0	0.063	0.24	U	-	0	
Plutonium 239/240	0	0.062	0.24	1.0	U	PU	0	0.063	0.24	U	-	0	
Americium 241	0.042	0.083	0.32	1.0	U	AM	0.136	0.18	0.35	U	-	0.9	
Potassium 40	10.6	0.89	0.47			GAM	11.6	0.69	0.28		9	35	0.8
Cobalt 60	U		0.042	0.050	U	GAM	U		0.032	U	-	0.4	
Cesium 137	U		0.046	0.10	U	GAM	0.029	0.020	0.027		45	203	0.7
Radium 226	0.428	0.074	0.076	0.10		GAM	0.419	0.062	0.061		2	47	0.1
Radium 228	0.636	0.16	0.18	0.20		GAM	0.642	0.14	0.14		1	59	0
Europium 152	U		0.096	0.10	U	GAM	U		0.071	U	-	0.4	
Europium 154	U		0.15	0.10	U	GAM	U		0.11	U	-	0.4	
Europium 155	U		0.10	0.10	U	GAM	U		0.099	U	-	0	
Thorium 228	0.528	0.043	0.044			GAM	0.661	0.050	0.053		22	36	1.9
Thorium 232	0.636	0.16	0.18			GAM	0.642	0.14	0.14		1	59	0
Uranium 235	U		0.15		U	GAM	U		0.12	U	-	0.3	
Uranium 238	U		5.0		U	GAM	U		4.0	U	-	0.3	
Americium 241	U		0.14		U	GAM	U		0.22	U	-	0.6	
Ruthenium-106	U		0.31		U	GAM	U		0.26	U	-	0.2	

300-VTS Verification

QC-DUP#4 54173

DUPLICATES

Page 1

SUMMARY DATA SECTION

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000029

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>10/28/05</u>

Date: 27 October 2005
To: Washington Closure Hanford Inc. (technical representative)
From: TechLaw, Inc.
Project: 300-VTS Verification - Waste Site 300-VTS
Subject: PCB - Data Package No. H3333-LLI

INTRODUCTION

This memo presents the results of data validation on Data Package No. H3333-LLI prepared by Lionville Laboratory Inc. (LLI). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Matrix	Validation	Date
J03WW7	8/22/05	Soil	C	See note 1
J03WW8	8/22/05	Soil	C	See note 1
J03WW9	8/22/05	Soil	C	See note 1
J03WX0	8/22/05	Soil	C	See note 1
J03WX1	8/22/05	Soil	C	See note 1

1 - PCBs by 8082.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 300 Area Remedial Action Sampling and Analysis Plan (DOE/RL-2001-48, June 2004). Appendices 1 through 5 provide the following information as indicated below:

- Appendix 1. Glossary of Data Reporting Qualifiers
- Appendix 2. Summary of Data Qualification
- Appendix 3. Qualified Data Summary and Annotated Laboratory Reports
- Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
- Appendix 5. Data Validation Supporting Documentation

DATA QUALITY OBJECTIVES

• Holding Times

Sample data were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded by less than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all

000001

associated detected sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blank**

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL.

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike & Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

All accuracy results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows

have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

Due to surrogate recoveries outside QC limits (16% and 18%), all PCB results in sample J03WX1 were qualified as estimates and flagged "J".

All other surrogate results were acceptable.

• Precision

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All precision results were acceptable.

Field Duplicate Samples

One set of field duplicate samples (J03WW7/J03WX1) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

• Analytical Detection Levels

Reported analytical detection levels are compared against the Remaining Waste Sites RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data Package No. H3333-LLI was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

Due to surrogate recoveries outside QC limits (16% and 18%), all PCB results in sample J03WX1 were qualified as estimates and flagged "J". Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

WCH, Contract #20266, *Validation Statement of Work*, Washington Closure Hanford Incorporated, July 7, 2003.

DOE/RL-2001-48, Rev. 1, *300 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, June 2004.

Appendix 1
Glossary of Data Reporting Qualifiers

000005

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

- U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.
- UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.
- J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.
- R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.
- UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.
- NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).
- N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2
Summary of Data Qualification

PCB DATA QUALIFICATION SUMMARY*

SDG 65333		REV. 1.1	PLUG 300 VTS	PAGE 11 OF 1
COMMENTS:				
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON	
All	J	J03WX1	Surrogate recovery	

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

000008

Appendix 3

Qualified Data Summary and Annotated Laboratory Reports

000009

Project: WASHINGTON CLOSURE HANFORD											
Laboratory: LLI		SDG: H3333									
Sample Number		J03WW7		J03WW8		J03WW9		J03WX0		J03WX1	
Remarks										Duplicate	
Sample Date		8/22/05		8/22/05		8/22/05		8/22/05		8/22/05	
Extraction Date		8/25/05		8/25/05		8/25/05		8/25/05		8/25/05	
Analysis Date		8/26/05		8/26/05		8/26/05		8/26/05		8/26/05	
PCB/Pesticide	RQL	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aroclor-1016	16.5	13 U		13 U		13 U		13 U		13 UJ	
Aroclor-1221	16.5	13 U		13 U		13 U		13 U		13 UJ	
Aroclor-1232	16.5	13 U		13 U		13 U		13 U		13 UJ	
Aroclor-1242	16.5	13 U		13 U		13 U		13 U		13 UJ	
Aroclor-1248	16.5	13 U		13 U		13 U		13 U		13 UJ	
Aroclor-1254	16.5	13 U		13 U		13 U		13 U		13 UJ	
Aroclor-1260	16.5	13 U		13 U		13 U		13 U		13 UJ	

000010

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 08/29/05 12:09

RFW Batch Number: 0508L218

Client: TNU-HANFORD B05-040

Work Order: 11343606001 Page: 1

	Cust ID:	J03WW7	J03WW7	J03WW7	J03WW8	J03WW9	J03WX0
Sample	RFW#:	001	001 MS	001 MSD	002	003	004
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	95 %	106 %	105 %	98 %	100 %	97 %
	Decachlorobiphenyl	101 %	112 %	112 %	101 %	106 %	101 %
		-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Aroclor-1016		13 U	92 %	88 %	13 U	13 U	13 U
Aroclor-1221		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1232		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1242		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1248		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1254		13 U	13 U	13 U	13 U	13 U	13 U
Aroclor-1260		13 U	103 %	103 %	13 U	13 U	13 U

	Cust ID:	J03WX1	PBLKSI	PBLKSI BS
Sample	RFW#:	005	05LE0711-MB1	05LE0711-MB1
Information	Matrix:	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	16 * %	95 %	68 %
	Decachlorobiphenyl	18 * %	108 %	86 %
		-----fl-----	-----fl-----	-----fl-----
Aroclor-1016		13 U	13 U	77 %
Aroclor-1221		13 U	13 U	13 U
Aroclor-1232		13 U	13 U	13 U
Aroclor-1242		13 U	13 U	13 U
Aroclor-1248		13 U	13 U	13 U
Aroclor-1254		13 U	13 U	13 U
Aroclor-1260		13 U	13 U	73 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

0000011

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

000012



Case Narrative

Client: TNU-HANFORD B05-040
LVL #: 0508L218
SDG/SAF # H3333 /B05-040

W.O. #: 11343-606-001-9999-00
Date Received: 08-23-2005

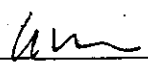
PCB

Five (5) soil samples were collected on 08-22-2005.

The samples and their associated QC samples were extracted on 08-25-2005 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 08-26-2005. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. The required holding time for extraction and analysis was met.
3. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
4. The method blank was below the reporting limits for all target compounds.
5. Two (2) of eighteen (18) surrogate recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
6. The blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria.
8. The initial calibrations associated with this data set were within acceptance criteria.
9. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.
11. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

9-1-2005
Date

son\l:\group\data\pest\tnu hanford\0508-218.pcb

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 8 pages 000013

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 056420

Initiator: M. Manally
Date: 8/29/08
Client: Tow Nansen

Batch: 0506L218
Samples: 005
Method: SW846/MCAWW/CLP/

Parameter: 0P6
Matrix: Soil
Prep Batch: 0506711

1. Reason for SDR

a. COC Discrepancy ☐ Tech Profile Error ☐ Client Request ☐ Sampler Error on C-O-C
☐ Transcription Error ☐ Wrong Test Code ☐ Other

b. General Discrepancy

☐ Missing Sample/Extract ☐ Container Broken ☐ Wrong Sample Pulled ☐ Label ID's Illegible
☐ Hold Time Exceeded ☐ Insufficient Sample ☐ Preservation Wrong ☐ Received Past Hold
☐ Improper Bottle Type ☐ Not Amenable to Analysis

Note: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

- 005 recovers for surrogates were low. Tex @ 16% (range: 28 - 118)
Dex @ 18% (range: 28 - 122).
- All other surr + spikes were OK.
- No hits in samples

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

Other Description:

☐ Re-log
☐ Entire Batch
☐ Following Samples: _____
☐ Re-leach
☐ Re-extract
☐ Re-digest
☐ Revise EDD
☐ Change Test Code to _____
☐ Place On/Take Off Hold (circle)

Narrative
[Signature]
8/29/08

4. Project Manager Instructions...signature/date:

☒ Concur with Proposed Action
☐ Disagree with Proposed Action; See Instruction
☐ Include in Case Narrative
☐ Client Contacted:
Date/Person _____
☐ Add
☐ Cancel

5. Final Action...signature/date:

Other Explanation:

☒ Verified re-[log][leach][extract][digest][analysis] (circle)
☐ Included in Case Narrative
☐ Hard Copy COC Revised
☐ Electronic COC Revised
☐ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route Distribution of Completed SDR
☐ X Initiator
☐ X Lab General Manager: M. Taylor
☒ X Project Mgr: Stone/Johnson
☐ Data Management: Stilwell
☐ Sample Prep: Beegle/Kiger

Route Distribution of Completed SDR
☐ Metals: Beegle
☐ Inorganic: Perrone
☐ GC/LC: Kiger
☐ MS: Rychlak/Daley
☐ Log-in: Perry
☐ Admin: _____
☐ Other: _____

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B05-040-01		Page 1 of 1	
Collector R. Fahlberg		Company Contact J Lerch		Telephone No. 373-5309		Project Coordinator KESSNER, JH		Price Code	
Project Designation 300-VTS Verification		Sampling Location 300-FF-2 300-VTS		SAF No. B05-040		Air Quality <input type="checkbox"/>		Data Turnaround 15 Days	
Ice Chest No. <i>ERC-02-003</i>		Field Logbook No. EL 1395-11		COA RG3VTS2000		Method of Shipment Fed EX			
Shipped To EBERLINE SERVICES, <u>LIONVILLE</u>		Offsite Property No. <i>A050356</i>				Bill of Lading/Air Bill No. SEE OSCP			
POSSIBLE SAMPLE HAZARDS/REMARKS Non Rad Area, No Activity Report Required Special Handling and/or Storage <i>COOL 4°C</i>				Preservation	None	Cool 4C			
				Type of Container	P	uG			
				No. of Container(s)	1	1			
				Volume	1000mL	250mL			
SAMPLE ANALYSIS				See item (1) in Special Instructions		PCBs - 8082			
Sample No.	Matrix *	Sample Date	Sample Time						
J03WW7	SOIL	8.22.05	0805	X	X				
J03WW8	SOIL	8.22.05	0817	X	X				
J03WW9	SOIL	8.22.05	0828	X	X				
J03WX0	SOIL	8.22.05	0842	X	X				
J03WX1	SOIL	8.22.05	0805	X	X				
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solid DL=Drum Liquid T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <i>ERC</i>		Date/Time <i>1430</i>		Received By/Stored In <i>Fed Ex</i>		Date/Time			
Relinquished By/Removed From <i>R. Fahlberg</i>		Date/Time <i>8.22.05</i>		Received By/Stored In <i>Fed Ex</i>		Date/Time			
Relinquished By/Removed From <i>See Ex</i>		Date/Time <i>8.23.05 0855</i>		Received By/Stored In <i>D. J. Miller</i>		Date/Time <i>8.23.05 1055</i>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

Appendix 5
Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	<u>C</u>	D	E
PROJECT: 300 VTS			DATA PACKAGE: #3333		
VALIDATOR: TLI		LAB: LLT		DATE: 10/20/05	
			SDG: #3333		
ANALYSES PERFORMED					
SW-846 8081	SW-846 8081 (TCLP)	<u>SW-846 8082</u>	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
J03WW7 J03WW8 J03WW9 J03WX0 J03WX1					
50.1					

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? Yes No N/A

Comments: _____

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations acceptable? Yes No N/AContinuing calibrations acceptable? Yes No N/AStandards traceable? Yes No N/AStandards expired? Yes No N/ACalculation check acceptable? Yes No N/ADDT and endrin breakdowns acceptable? Yes No N/A

Comments: _____

PCB DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E)..... Yes No N/A

Calibration blank results acceptable? (Levels D, E)..... Yes No N/A

Laboratory blanks analyzed?..... Yes No N/A

Laboratory blank results acceptable?..... Yes No N/A

Field/trip blanks analyzed? (Levels C, D, E)..... Yes No N/A

Field/trip blank results acceptable? (Levels C, D, E)..... Yes No N/A

Transcription/calculation errors? (Levels D, E)..... Yes No N/A

Comments: No Pb

4. ACCURACY (Levels C, D, and E)

Surrogates analyzed?..... Yes No N/A

Surrogate recoveries acceptable?..... Yes No N/A

Surrogates traceable? (Levels D, E)..... Yes No N/A

Surrogates expired? (Levels D, E)..... Yes No N/A

MS/MSD samples analyzed?..... Yes No N/A

MS/MSD results acceptable?..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E)..... Yes No N/A

MS/MSD standards expired? (Levels D, E)..... Yes No N/A

LCS/BSS samples analyzed?..... Yes No N/A

LCS/BSS results acceptable?..... Yes No N/A

Standards traceable? (Levels D, E)..... Yes No N/A

Standards expired? (Levels D, E)..... Yes No N/A

Transcription/calculation errors? (Levels D, E)..... Yes No N/A

Performance audit sample(s) analyzed?..... Yes No N/A

Performance audit sample results acceptable?..... Yes No N/A

Comments: XI- Surr recovery - Tall no Pb

PCB DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? Yes No N/A
Duplicate results acceptable? Yes No N/A
MS/MSD standards NIST traceable? (Levels D, E) Yes No N/A
MS/MSD standards expired? (Levels D, E) Yes No N/A
Field duplicate RPD values acceptable? Yes No N/A
Field split RPD values acceptable? Yes No N/A
Transcription/calculation errors? (Levels D, E) Yes No N/A

Comments: _____

6. SYSTEM PERFORMANCE (Levels D and E)

Chromatographic performance acceptable? Yes No N/A
Positive results resolved acceptably? Yes No N/A

Comments: _____

7. HOLDING TIMES (all levels)

Samples properly preserved? Yes No N/A
Sample holding times acceptable? Yes No N/A

Comments: _____

PCB DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E).....	Yes	No	N/A
Compound quantitation acceptable? (Levels D, E).....	Yes	No	N/A
Results reported for all requested analyses?.....	Yes	No	N/A
Results supported in the raw data? (Levels D, E).....	Yes	No	N/A
Samples properly prepared? (Levels D, E).....	Yes	No	N/A
Detection limits meet RDL?.....	Yes	No	N/A
Transcription/calculation errors? (Levels D, E)	Yes	No	N/A

Comments: _____

9. SAMPLE CLEANUP (Levels D and E)

Fluorilcil ® (or other absorbent) cleanup performed?.....	Yes	No	N/A
Lot check performed?.....	Yes	No	N/A
Check recoveries acceptable?.....	Yes	No	N/A
GPC cleanup performed?	Yes	No	N/A
GPC check performed?	Yes	No	N/A
GPC check recoveries acceptable?.....	Yes	No	N/A
GPC calibration performed?.....	Yes	No	N/A
GPC calibration check performed?	Yes	No	N/A
GPC calibration check retention times acceptable?	Yes	No	N/A
Check/calibration materials traceable?.....	Yes	No	N/A
Check/calibration materials Expired?.....	Yes	No	N/A
Analytical batch QC given similar cleanup?	Yes	No	N/A
Transcription/Calculation Errors?.....	Yes	No	N/A

Comments: _____
